

## MANAGEMENT UNIT 17 - WASATCH MOUNTAINS

### BOUNDARY DESCRIPTION

**Salt Lake, Summit, Wasatch, Duchesne, Carbon, Utah counties** - Boundary begins at the junction of I-15 and I-80 in Salt Lake City; east on I-80 to US-40; south on US-40 to SR-32; east on SR-32 to SR-35; southeast on SR-35 to SR-87; south on SR-87 to Duchesne and US-191; south on US-191 to US-6; northeast on US-6 to I-15; north on I-15 to I-80 in Salt Lake City and beginning point.

### MANAGEMENT UNIT DESCRIPTION

Management unit 17 is divided into eight smaller, more manageable subunits. These are: Diamond Fork, Hobble Creek, Timpanogas, Salt Lake County-East Bench, Heber, Currant Creek, Avintaquin, and Price Canyon. The 2002 report covers only the Diamond Fork, Hobble Creek, Timpanogas, and Heber subunits. The Salt Lake County-East Bench subunit no longer contains range trend studies due to lack of access and development. The Currant Creek and Avintaquin subunits are monitored as part of the Division's Northeastern Region rotation which were last read in 2000 and will be reread in 2005. The Price Canyon subunit is monitored as part of the Division's Southeastern Region rotation which was last read in 1999 and will be reread in 2004.

Of the total area within this management unit, 63% is summer range, 35% is winter range, and 2% is classified as yearlong range. The areas of most concern in this unit are the winter ranges, which are very limited in quantity and quality. Residential developments along the Wasatch Front have consumed much of the critical winter range that was available to wildlife, and this will continue in the future. Because most of the winter range in this unit now lies on private land, managing wildlife populations is a challenge. Critical issues facing management of big game in unit 17 include crop depredation, habitat quantity and quality, and highway mortality (Deer Herd Unit Management Plan 2001).

### Habitat Management Objectives/Strategies

The primary habitat management objectives for this unit are: 1) maintain and/or enhance forage production through direct range improvements throughout the unit on winter range; 2) work with private landowners and federal, state, local, and tribal governments to maintain and protect critical and existing winter range from future losses; and 3) provide improved habitat security and escapement opportunities for deer. The strategies to be used to accomplish these objectives are: 1) monitor range trend studies throughout the unit, specifically those found on remaining winter ranges; 2) work cooperatively to utilize grazing, prescribed burning, and other recognized vegetative manipulation techniques to enhance deer forage quantity and quality; 3) utilize antlerless deer harvest to improve or protect forage when vegetative declines are attributed to deer over-utilization; and 4) cooperate with and provide input to land management planning efforts dealing with management affecting habitat security, quality, and quantity (Deer Herd Unit Management Plan 2001).

### Range Trend Studies

The range trend studies in the Diamond Fork, Hobble Creek, and Timpanogas subunits were established in 1983, and resampled in 1989, 1997, and 2002. The trend studies in the Heber subunit were established in 1983 and 1984, and resampled in 1989, 1996, and 2002. Several studies were suspended in 2002 due to lack of access and loss to development. Some studies were not read because they no longer are representative of critical winter range. Several new studies were established in 2002 to monitor new areas considered critical for big game, including a few for Rocky Mountain bighorn sheep. The suspension of old studies and the establishment of new sites is done with input from Division biologists and federal land managers.

## SUMMARY

### WILDLIFE MANAGEMENT UNIT 17 - WASATCH MOUNTAINS

The Wasatch Mountain unit is large and covers a vast area. The western half of unit 17 was sampled in 2002. Sites on the unit are concentrated in three different areas which include the Heber Valley, the Wasatch Front, and Spanish Fork Canyon. Trend studies were established in 1983 and reread in 1989. The Heber area was reread in 1996 and the rest of the unit was reread in 1997. In 2002, 24 trend studies were reread in unit 17. One new study, Center Creek (17-60), was established east of Heber to monitor increasingly important winter ranges on the east foothills of the Heber Valley. Three trend studies, Daniels Canyon (17-6), Upper Big Hollow (17-10), and Lake Creek Road (17-20), were suspended in the Heber subunit after consideration by area biologists. Three new studies, American Fork Canyon (17-61), Grove Creek (17-62), and Hobbie Creek Bench (17-63), were established along the Wasatch Front in 2002. American Fork Canyon and Grove Creek were established to monitor bighorn sheep winter ranges and Hobbie Creek Bench was established to replace suspended sites in the area. A new study was also placed in Spanish Fork Canyon on a pinyon-juniper chaining which supports wintering deer and elk. Eight trend studies were suspended along the Wasatch Front. Many of these sites are no longer accessible due to development or are no longer representative of critical big game winter ranges. Two trend studies in Spanish Fork Canyon, North Fork Diamond Canyon (17-38) and Tie Fork (17-43), were also suspended.

Ten trend studies were reread in the Heber subunit in 2002. All sites sample winter ranges, half of which are found within the Wallsburg wildlife management area. Trend studies on the Heber subunit show slightly downward soil trends on three sites, slightly downward browse trends on three sites, and slightly downward herbaceous trends on six sites. The Deer Creek Dam (17-5) and Lower Big Hollow (17-9) trend studies displayed slightly downward trends for soil and herbaceous understory. Studies located east of Deer Creek Reservoir in the Wallsburg Wildlife Management area, Island Boat Camp (17-15) and Rainbow Bay (17-16), showed declining trends for browse and herbaceous plants. The Coyote Canyon trend study (#17-19) located northeast of Heber had downward trends on soil and browse. The only other downward trends consisted of slightly downward herbaceous understory trends at Hoovers Hollow (17-14) and Dutch Canyon (17-17).

Drought conditions for the past few years are the primary cause for these downward trends, especially downward trends for herbaceous understories. The forb component shows the most dramatic effects of drought. All 10 trend studies in the Heber subunit showed a decline in the sum of nested frequency value for forbs. Perennial grasses increased in abundance on all but one site. Nested frequency of the annual, cheatgrass, declined on eight sites and increased slightly on two sites.

Six trend studies were reread along the Wasatch Front from the mouth of American Fork Canyon to Hobbie Creek Canyon. All of these sites sample critical winter ranges. Trend studies at Heissetts Hollow (17-24) and North Battle Creek (17-25) showed declining trends for soil and browse. The only other downward trends were found for herbaceous understories at Round Peak (17-31) and Maple Mountain Face (17-34). All other sites showed stable or improving conditions. Drought conditions were not as pronounced with regard to herbaceous understory trends along the Wasatch Front as they were in the Heber Valley and in Spanish Fork Canyon. Of the six studies read along the front, three trend studies showed a decline in the sum of nested frequency of forbs while two sites increased and one remained stable. Frequency of cheatgrass declined on three sites and increased on three sites.

Eight trend studies were reread in Spanish Fork Canyon. Two trend studies, Tank Hollow (17-42) and Lower Tank Hollow (17-46), appear to have been especially hard hit by drought conditions. Trends at these sites were down or slightly down for soil, browse, and the herbaceous understory. Herbaceous understory trends were also declining at Upper Sheep Creek (17-41) and Tie Fork East (17-47). All eight sites showed a decline in the sum of nested frequency for forbs. Three trend studies displayed a decline in the abundance of perennial grasses as well.

Unit wide trends include the following: a general decline in the abundance of perennial forbs, a decline in the frequency of cheatgrass, a major decline in the density of broom snakeweed, a slight increase in the average nested frequency of perennial grasses, and an increase in the abundance of the poor value perennial, bulbous bluegrass. Sum of nested frequency for forbs was down on all but three of the 24 trend studies sampled in 2002. Average sum of nested frequency of forbs declined 39% between the last reading (1996/97) and 2002. Cheatgrass frequency declined on 16 of the 24 sites read in 2002. Broom snakeweed, a short lived invasive shrub, varies widely in density related to precipitation. Average density per site for unit 17 was estimated at 3,792 plants/acre in 1997, declining to an average of about 1,500 plants/acre in 2002. It appears that perennial grasses were not greatly effected as much by drought conditions. Perennial grasses increased in frequency on 16 of the 24 sites sampled in 2002. One disturbing trend is the increase in the poor value perennial grass, bulbous bluegrass. It has been increasing in many areas as cheatgrass has declined. Bulbous bluegrass has many similarities with cheatgrass. Both dry out early in the summer, although bulbous bluegrass does not provide the fine fuels as cheatgrass does. Ten sites supported bulbous bluegrass prior to the 2002 reading. Nested frequency increased on eight of those 10 sites in 2002, and bulbous bluegrass was sampled on three additional sites.

Precipitation is the major driving force for these trends. Data indicates a wet period from 1983 to 1986. Spring precipitation (March, April, and May) was 131% of normal in 1983, the year trend studies were established. Precipitation was below normal for the next three years (1987-89) and the trend studies were resampled at the end of that dry period in 1989. Spring precipitation was only 77% of normal in 1989. Another wet period occurred between 1995 and 1998. The 1996 and 1997 rereads occurred in the middle of this wetter than normal period. Spring precipitation was normal in 1996 and 80% of normal in 1997. Precipitation was near normal in 1999 and 2000 but very dry in 2001 at only 64% of normal. Conditions remained dry in 2002 and spring precipitation (March-May) was below normal in 2000 (68%), 2001 (75%) and 2002 (81%). This extended dry period is the cause for many of downward trends in Unit 17 in 2002.

A trend summary of each study is listed below.

# SUMMARY

	Category	1983	1989	1996	2002
17-5 Deer Creek Dam	soil	est	3	3	2
	browse	est	2	5	4
	herbaceous understory	est	3	3	2
17-9 Lower Big Hollow	soil	est	4	3	2
	browse	est	2	4	3
	herbaceous understory	est	4	4	2
17-11 Wallsburg Turn	soil	est	3	4	4
	browse	est	4	3	3
	herbaceous understory	est	5	3	3
17-12 North Wallsburg Seeding	soil	est	3	3	3
	browse	est	3	3	3
	herbaceous understory	est	5	3	3
17-13 North Wallsburg	soil	est	3	3	3
	browse	est	1	4	3
	herbaceous understory	est	5	4	4
17-14 Hoovers Hollow	soil	est	3	4	3
	browse	est	3	3	3
	herbaceous understory	est	4	3	2
17-15 Island Boat Camp	soil	est	4	3	3
	browse	est	3	3	2
	herbaceous understory	est	5	5	2
17-16 Rainbow Bay	soil	est	4	3	3
	browse	est	2	2	2
	herbaceous understory	est	4	4	2
17-17 Dutch Canyon	soil	est	4	4	3
	browse	est	2	3	3
	herbaceous understory	est	4	3	2

1 = down, 2 = slightly down, 3 = stable, 4 = slightly up, 5 = up, est = established, susp = suspended, NR = not read

	Category	1984	1990	1996	2002
17-19 Coyote Canyon	soil	est	NR	3	1
	browse	est	NR	3	2
	herbaceous understory	est	NR	4	3
	Category	1983	1989	1997	2002
17-24 Heisett's Hollow	soil	est	3	3	2
	browse	est	3	4	2
	herbaceous understory	est	4	4	3
17-25 North Battle Creek	soil	est	3	3	2
	browse	est	3	3	2
	herbaceous understory	est	3	2	3
17-26 Orem Water Tank	soil	est	3	3	5
	browse	est	1	3	3
	herbaceous understory	est	3	3	3
17-30 Spring Canyon	soil	est	3	3	3
	browse	est	4	3	3
	herbaceous understory	est	2	4	3
17-31 Round Peak	soil	est	3	3	3
	browse	est	4	2	3
	herbaceous understory	est	5	3	2
17-34 Maple Mountain Face	soil	est	2	3	4
	browse	est	2	4	4
	herbaceous understory	est	3	5	2
17-39 Little Diamond Fork	soil	est	3	4	3
	browse	est	3	3	3
	herbaceous understory	est	3	3	3
17-40 Long Hollow	soil	est	3	4	3
	browse	est	4	3	3
	herbaceous understory	est	3	5	3

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	Category	1983	1989	1997	2002
17-41 Upper Sheep Creek	soil	est	NR	3	3
	browse	est	NR	3	3
	herbaceous understory	est	NR	5	2
17-42 Tank Hollow	soil	est	4	4	2
	browse	est	3	3	2
	herbaceous understory	est	3	3	1
17-44 Billies Mountain	soil	est	3	4	2
	browse	est	2	4	3
	herbaceous understory	est	3	4	3
17-45 North Bench	soil	est		3	4
	browse	est		5	3
	herbaceous understory	est		5	3
17-46 Lower Tank Hollow	soil	est		5	2
	browse	est		4	2
	herbaceous understory	est		5	2
17-47 Tie Fork East	soil	est		4	2
	browse	est		3	3
	herbaceous understory	est		4	2
17-60 Center Creek	soil				est
	browse				est
	herbaceous understory				est
17-61 American Fork Canyon	soil				est
	browse				est
	herbaceous understory				est
17-62 Grove Creek	soil				est
	browse				est
	herbaceous understory				est

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	Category					2002
17-63 Hobble Creek Bench	soil					est
	browse					est
	herbaceous understory					est
17-64 Water Hollow	soil					est
	browse					est
	herbaceous understory					est
SUSPENDED SITES						
	Category	1983	1989	1996	2002	
17-6 Daniels Canyon	soil	est	1	3	susp	
	browse	est	2	3	susp	
	herbaceous understory	est	4	2	susp	
17-10 Upper Big Hollow	soil	est	4	3	susp	
	browse	est	5	3	susp	
	herbaceous understory	est	5	2	susp	
	Category	1984	1990	1996	2002	
17-20 Lake Creek Road	soil	est	3	4	susp	
	browse	est	3	3	susp	
	herbaceous understory	est	3	3	susp	
	Category	1983	1989	1997	2002	
17-21 Box Elder Canyon	soil	est	2	3	susp	
	browse	est	3	3	susp	
	herbaceous understory	est	3	3	susp	
17-22 School House Spring	soil	est	2	3	susp	
	browse	est	3	3	susp	
	herbaceous understory	est	2	3	susp	
17-23 Oak Hollow	soil			est	susp	
	browse			est	susp	
	herbaceous understory			est	susp	

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	Category	1983	1989	1997	2002
17-28 Spring Hollow	soil	est	1	3	susp
	browse	est	3	3	susp
	herbaceous understory	est	3	2	susp
17-29 Above Edgemont	soil		est	3	susp
	browse		est	1	susp
	herbaceous understory		est	3	susp
17-33 Maple Canyon	soil	est	4	3	susp
	browse	est	3	3	susp
	herbaceous understory	est	2	2	susp
17-35 Hobble Creek Golf Course	soil	est	3	3	susp
	browse	est	4	3	susp
	herbaceous understory	est	3	3	susp
	Category		1989	1997	2002
17-36 Big Slide	soil		est	4	susp
	browse		est	1	susp
	herbaceous understory		est	3	susp
	Category	1983	1989	1997	2002
17-38 North Fork Diamond Canyon	soil	est	4	4	susp
	browse	est	1	1	susp
	herbaceous understory	est	3	5	susp
17-43 Tie Fork	soil	est	NR	3	susp
	browse	est	NR	3	susp
	herbaceous understory	est	NR	5	susp

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